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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/699,203

10/31/2003

Joseph David Ryan

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7590

05/05/2006

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EXAMINER

KIM, PAUL

ART UNIT

PAPER NUMBER

2161

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/699,203

Applicant(s)

RYAN ET AL.

Examiner

Paul Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
**SAM RIMELL**  
**PRIMARY EXAMINER**

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 31 October 2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This Office Action is responsive to the following communication: Application filed on 31 October 2003.
2. Claims 1-33 are pending and present for examination. Claims 1, 8, 15, 22, 26, and 27 are independent.

### ***Drawings***

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

- Reference character "40"; and
- Reference character "50".

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. Figures 1-3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be

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notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to because of the following:

- Figures 1A-1B, 2, 3A-3B, 4A-4B, and 5-8 contain reference characters which are handwritten.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 101***

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. **Claims 22-25** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. A method of altering the hierarchical structure of a markup language file is directed towards non-statutory subject matter where the method fails to produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. **Claims 1, 2, 5-9, 12-15, 19, 21, 26-28, and 31-33** are rejected under 35 U.S.C. 102(e) as being anticipated by Sangudi et al (U.S. Patent No. 6,925,470, hereinafter referred to as SANGUDI), filed on 25 January 2002, and issued on 2 August 2005.

10. **As per independent claims 1, 8, 15, 26, and 27**, SANGUDI teaches:

A method of transferring data from a markup language file having a hierarchical structure to a relational database {See SANGUDI, Abstract, wherein this reads over "a method and apparatus for representing an XML data structure as a fixed set of tables in relational database"}, said hierarchical structure comprising a tree or forest of nodes on which depth first search imposes a total ordering, with some nodes designated as repeating nodes, and said method comprising:

partitioning said hierarchical structure into sections {See SANGUDI, col. 8, lines 64-66, wherein this reads over "a data model that allows XML data to be partitioned in variable-sized chunks"}, wherein each section is dedicated to at least one leaf node of said hierarchical structure, and wherein two non-repeating leaf nodes that are adjacent in frontier order and have the same parent are contained in the same section, frontier order being the order in which leaf nodes are encountered in a depth first search of said hierarchical structure {See SANGUDI, Figures 8-9};

allocating a memory section for each of said sections of said hierarchical structure according to the data types of the nodes in the section {See SANGUDI, Figures 3A-C, 4A-B, 5A-C, and 6A-F};

after completing said partitioning and allocating, parsing said markup language file to produce a stream of data pairs, wherein each of said data pairs comprises an element of node data and an element of node location information, and wherein said node location information indicates the location of the corresponding node within said hierarchical structure {See SANGUDI, Figure 10};

while performing said parsing process, loading said node data into the memory section allocated for the section containing the corresponding node location as said data pairs are output from said parsing process {See SANGUDI, Figures 10, 11A-C, and 12}; and

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transferring said node data from said sections to said relational database, wherein information is transferred from one section as soon as said loading process completes loading at least one element of node data to said one memory section and an end of section indicator has been encountered by said parsing process {See SANGUDI, Figure 15; col. 7, lines 54-56, wherein this reads over "a logical data model using documents, such as XML, to map to a table, for example in a relational database"; and col. 8, lines 14-19, wherein this reads over "XML unites (nodes) are exposed in the relational schema. This node order model stores the preorder traversal position of the nodes in an XML document and uses the position to reassemble the XML tree with the correct hierarchy and ordering"}<sub>2</sub>

**11. As per dependent claims 2, 9, and 28, SANGUDI teaches:**

The method in claim 1,

wherein said partitioning said hierarchical structure into sections {See SANGUDI, col. 8, lines 64-66, wherein this reads over "a data model that allows XML data to be partitioned in variable-sized chunks"}<sub>2</sub>

wherein each section is dedicated to at least one leaf node of said hierarchical structure {See SANGUDI, Figures 8-9}, and

wherein two non-repeating leaf nodes that are adjacent in frontier order and have the same parent are contained in the same section {See SANGUDI, Figures 8-9}<sub>2</sub>

frontier order being the order in which leaf nodes are encountered in a depth first search of said hierarchical structure {See SANGUDI, Figures 7-9; and col. 8, lines 14-19, wherein this reads over "XML unites (nodes) are exposed in the relational schema. This node order model stores the preorder traversal position of the nodes in an XML document and uses the position to reassemble the XML tree with the correct hierarchy and ordering"}<sub>2</sub>

**12. As per dependent claims 5, 12, 19, and 31, SANGUDI teaches:**

The method in claim 1, wherein said node location information of said data pairs comprises leaf nodes of said hierarchical data structure {See SANGUDI, Figure 10}<sub>2</sub>

**13. As per dependent claims 6, 13, and 32, SANGUDI teaches:**

The method in claim 1, wherein in said partitioning process any two non-repeating leaf nodes of said hierarchical structure that are adjacent in frontier order and have the same repeating ancestors are in the same section {See SANGUDI, Figure 10}<sub>2</sub>

**14. As per dependent claims 7, 14, 21, and 33, SANGUDI teaches:**

The method in claim 1, wherein said parsing process relocates all data in said hierarchical structure to the leaf nodes of said hierarchical structure {See SANGUDI, Figure 10, 11A-C, and 12}<sub>2</sub>

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***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. **Claims 3, 10, 17, and 29** are rejected under 35 U.S.C. 103(a) as being unpatentable over SANGUDI, in view of Schloss et al (U.S. Patent No. 6,249,844, hereinafter referred to as SCHLOSS), filed on 13 November 1998, and issued on 19 June 2001.

SANGUDI teaches the limitations of claims 1, 2, 5-9, 12-15, 19, 21, 26-28, and 31-33 for the reasons stated above.

SANGUDI differs from the claimed invention in that SANGUDI fails disclose a method comprising erasing the memory section when an end of section has been encountered, and node data of the data pair is ready to be loaded in the memory section (claims 3, 10, 17, and 29).

17. **As per dependent claims 3, 10, 17, and 29**, SANGUDI, in combination with SCHLOSS, discloses:

The method in claim 1, further comprising erasing said memory section {See SCHLOSS, col. 5, lines 38-41, wherein this reads over "the first segment begins with a start-tag, <cml: molecule>, and ends with an end tag, </cml: molecule>; and col. 9, lines 2-6, wherein this reads over "the fragment cache manager will be invoked to check if any of its fragment version is in the fragment cache and delete it"},

wherein a first memory section is erased only when an end of section indicator has been encountered by said parsing process {See SCHLOSS, col. 4, lines 33-37, wherein this reads over "parsing the document to recognize the segments can be done by matching each 'end-tag'"}, a new corresponding data pair is produced by said parsing process {See SANGUDI, Figure 10}, and the node data of said data pair is ready to be loaded in said first memory section {See SCHLOSS, col. 8, lines 38-40, wherein this reads over "it is check whether there is enough free space in the fragment cache to cache the requested fragment"}.

The combination of the inventions disclosed in SANGUDI and SCHLOSS would disclose a method wherein the memory section is erased when an end of section (i.e. end-tag) has been encountered, and

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node data of the data pair is ready to be loaded in the memory section. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the inventions suggested by SANGUDI and SCHLOSS.

One of ordinary skill in the art would have been motivated to do this modification so that the memory section may be freed of unused data.

18. **Claims 4, 11, 18, and 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over SANGUDI, in view of SCHLOSS and Cox (USPGPUB No. 2002/0112224, hereinafter referred to as COX), filed on 31 January 2001, and published on 15 August 2002.

SANGUDI teaches the limitations of claims 1, 2, 5-9, 12-15, 19, 21, 26-28, and 31-33 for the reasons stated above.

SANGUDI differs from the claimed invention in that SANGUDI fails disclose a method wherein information is transferred from one section as soon as the loading process completes loading at least one element of node data to the memory section and an end section indicator has been encountered by the parsing process (claims 4, 11, 18, 30).

19. **As per dependent claims 4, 11, 18, and 30**, SANGUDI, in combination with SCHLOSS and COX, discloses:

The method in claim 1.

wherein said transferring said node data from said sections to said relational database {See SANGUDI, Figure 15; col. 7, lines 54-56, wherein this reads over "a logical data model using documents, such as XML, to map to a table, for example in a relational database"; and col. 8, lines 14-19, wherein this reads over "XML unites (nodes) are exposed in the relational schema. This node order model stores the preorder traversal position of the nodes in an XML document and uses the position to reassemble the XML tree with the correct hierarchy and ordering"}.

wherein information is transferred from one section as soon as said loading process completes loading at least one element of node data to said one memory section and an end of section indicator has been encountered by said parsing process {See COX, Figure 5; and Para. 0048, wherein this reads over "the SAX XML parser allows for the first element found in the XML file to be immediately received by the Operator" and "rather than in the process currently in use where the XML parsing of the entire file is completed before the SQL command generation is even started, the processes of the present invention are executed simultaneously in parallel in the system"}.

wherein an end of section indicator is encountered {See SCHLOSS, col. 4, lines 33-37, wherein this reads over "parsing the document to recognize the segments can be done by matching each 'end-tag'"}

when the parsing process produces either a node location from a different section or



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a node location at or preceding the last of the at least one node location in the one section in depth first search order {See SANGUDI, Figures 7 and 8; and col. 4, lines 23-24, wherein this reads over "<Employee> and </Employee> are start and closing tags respectively"}.

The combination of the inventions disclosed in SANGUDI, SCHLOSS, and COX would disclose a method wherein information is transferred, using an SAX XML parser, from one section as soon as the loading process completes locating at least one element of node data to the memory section and an end of section indicator has been encountered. Furthermore, SCHLOSS discloses a method wherein parsing the document comprises of recognizing segment by matching segment with and end-tag. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the inventions suggested by SANGUDI, SCHLOSS, and COX.

One of ordinary skill in the art would have been motivated to do this modification so that the XML parsing process would not have to wait for the XML parsing of the entire file to be complete before transferring data to the memory section.

20. **Claims 16 and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over SANGUDI, in view of Mani et al (USPGPUB No. 2003/0212698, hereinafter referred to as MANI), filed on 9 May 2002, and published on 13 November 2003.

SANGUDI teaches the limitations of claims 1, 2, 5-9, 12-15, 19, 21, 26-28, and 31-33 for the reasons stated above.

SANGUDI differs from the claimed invention in that SANGUDI fails disclose a method wherein the partitioning is based on a document type definition file (claim 16).

SANGUDI differs from the claimed invention in that SANGUDI fails disclose a method wherein the leaf nodes of the hierarchical structure include repeating nodes and are allocated an exclusively dedicated section (claim 20).

21. **As per dependent claim 16**, SANGUDI, in combination with MANI, discloses a method, wherein partitioning is based on a document type definition file, separate from the hierarchical file, wherein the document type definition file comprises the hierarchical structure {See MANI, Para. 0007, wherein this reads over "[t]he formal relations among elements and attributes in XML documents are governed by declarations set forth in

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Document Type Definitions . . . [which] is a form description in XML Declaration Syntax of a particular type of XML document . . . [setting] out what names are to be used for the different types of element, where they may occur, and how they all fit together").

The combination of the inventions disclosed in SANGUDI and MANI would disclose a method wherein partitioning is based on a document type definition file (DTD) that comprises of a hierarchical structure. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the inventions suggested by SANGUDI and MANI.

One of ordinary skill in the art would have been motivated to do this modification so that the hierarchical file (i.e. an XML file) may be partitioned according to format set forth by the DTD.

22. **As per dependent claim 20**, SANGUDI, in combination with MANI, discloses a method, wherein leaf nodes of the hierarchical structure include repeating nodes {See MANI, Para. 0097, wherein this reads over " 'Repeating nodes' are nodes that represent repeating elements"} and wherein a different section is exclusively dedicated to each of the repeating nodes {See MANI, Figures 8-12; and Para. 0111, wherein this reads over "[n]odes representing elements declared with '+' or '\*', that is, repeating elements, are considered 'repeating nodes,'}.

The combination of the inventions disclosed in SANGUDI and MANI would disclose a method wherein leaf nodes of the hierarchical structure include repeating nodes and wherein a different section is exclusively dedicated to each of the repeating nodes (i.e. repeating nodes are allocated node space within the tree, indicated by "+" or "\*"). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the inventions suggested by SANGUDI and MANI.

One of ordinary skill in the art would have been motivated to do this modification so that the repeating nodes may be reorganized accordingly.

### ***Conclusion***

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Kim whose telephone number is (571) 272 2737. The examiner can normally be reached on M-F, 9am - 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on (571) 272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Paul Kim  
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**SAM RIMELL**  
**PRIMARY EXAMINER**